Washington State Institute for Public Policy

Benefit-Cost Results

Methadone maintenance treatment

Benefit-cost estimates updated December 2015. Literature review updated May 2014.

Current estimates replace old estimates. Numbers will change over time as a result of model inputs and monetization methods.

The WSIPP benefit-cost analysis examines, on an apples-to-apples basis, the monetary value of programs or policies to determine whether the benefits from the program exceed its costs. WSIPP's research approach to identifying evidence-based programs and policies has three main steps. First, we determine "what works" (and what does not work) to improve outcomes using a statistical technique called meta-analysis. Second, we calculate whether the benefits of a program exceed its costs. Third, we estimate the risk of investing in a program by testing the sensitivity of our results. For more detail on our methods, see our technical documentation.

Program Description: Methadone is an opiate substitution treatment used to treat opioid dependence. It is a synthetic opioid that blocks the effects of opiates, reduces withdrawal symptoms, and relieves cravings. Methadone is dispensed in outpatient clinics that specialize in methadone treatment and is often used in conjunction with behavioral counseling approaches.

Benefit-Cost Summary

Program benefits	
Participants	$1,647
Taxpayers	$1,047
Other (1)	$354
Other (2)	$5,050
Total	$8,097
Costs	($3,709)
Benefits minus cost	$4,388

Summary statistics	
Benefit to cost ratio	$2.18
Benefits minus costs	$4,388
Probability of a positive net present value	89 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2014). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$4	$11	$2	$18
Labor market earnings (opioid drug abuse/dependence)	$1,579	$673	$0	$6,719	$8,971
Health care (opioid drug abuse/dependence)	$68	$369	$343	$185	$964
Adjustment for deadweight cost of program	$0	$0	$0	($1,856)	($1,856)
Totals	$1,647	$1,047	$354	$5,050	$8,097

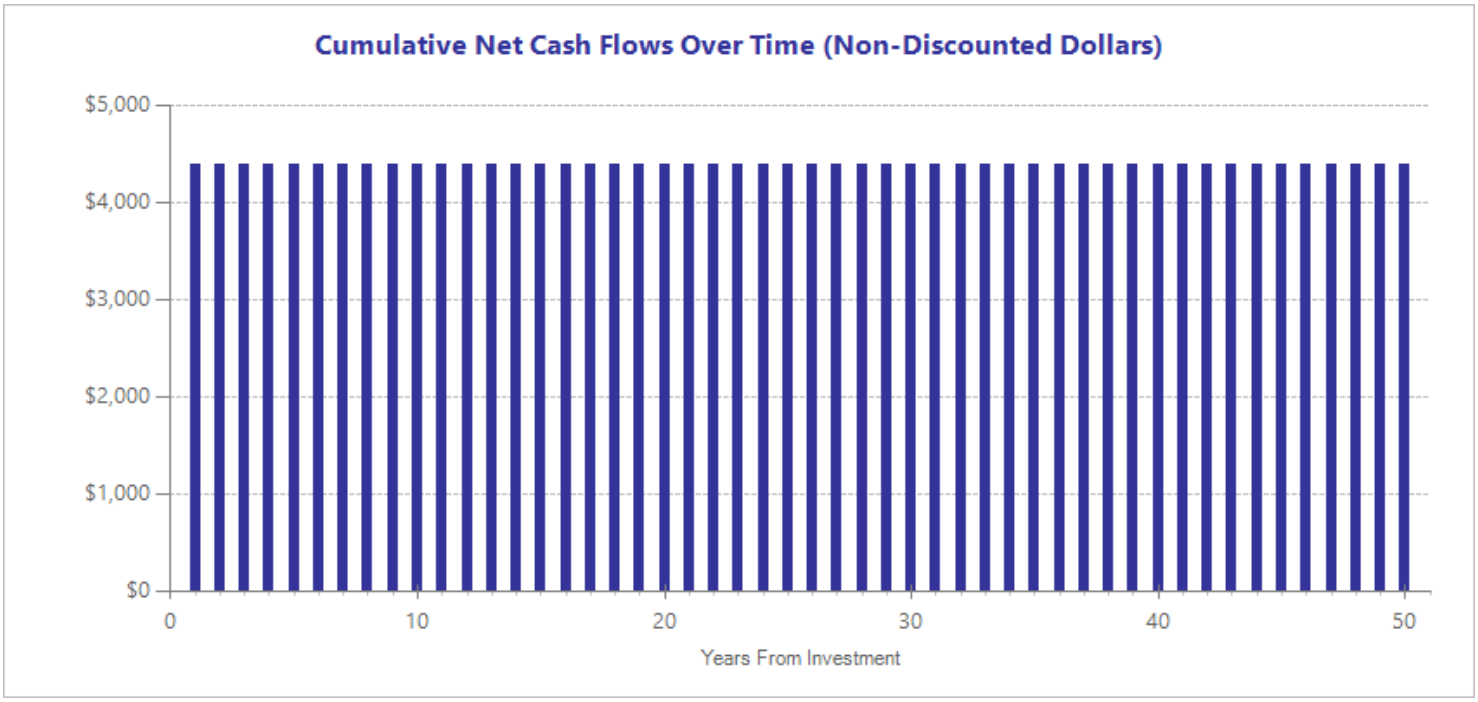
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization, the economic spillover benefits of improvement in human capital outcomes, and the benefits from private or employer-paid health insurance. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$3,613	1	2012	Present value of net program costs (in 2014 dollars)	($3,709)
Comparison costs	$0	1	2013	Uncertainty (+ or - %)	20 %

We estimate the costs of providing methadone in addition to standard substance abuse treatment. Costs reflect the average of costs reported in numerous cost-effectiveness studies (Rosenhack and Kosten, 2001; Jones et al., 2009; Nordlund et al., 2004; Masson et al, 2004). Costs included vary by study but generally include costs of medication, dispensing, toxicology screens, medical care related to methadone treatment, and when available, costs of equipment, administration, and clinic space. Jones, E.S., Moore, B.A., Sindelar, J.L., O'Connor, P.G., Schottenfeld, R.S., & Fiellin, D.A. (2009). Cost analysis of clinic and office-based treatment of opioid dependence: Results with methadone and buprenorphine in clinically stable patients. Drug and Alcohol Dependence, 99(1), 132-140.
Masson, C.L., Barnett, P.G., Sees, K.L., Delucchi, K.L., Rosen, A., Wong, W., & Hall, S.M. (2004). Cost and cost-effectiveness of standard methadone maintenance treatment compared to enriched 180-day methadone detoxification. Addiction, 99(6), 718-726. Nordlund, D.J., Estee, S., Mancuso, D., & Felver, B. (2004). Methadone treatment for opiate addiction lowers health care costs and reduces arrests and convictions. Olympia, Wash.: Washington State Dept. of Social and Health Services, Research and Data Analysis Division. Rosenheck, R., & Kosten, T. (2001). Buprenorphine for opiate addiction: potential economic impact. Drug and Alcohol Dependence, 63(3), 253-262.

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta analysis. The uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Crime	Primary	2	347	-0.505	0.001	-0.505	0.153	35	0.000	0.000	36
Employment	Primary	1	71	-0.334	0.054	-0.334	0.174	35	0.000	0.000	36
Cannabis use	Primary	1	21	-0.690	0.180	-0.690	0.514	35	0.000	0.000	36
Hospitalization	Primary	3	286	0.242	0.602	0.242	0.464	35	0.000	0.000	36
Opioid drug abuse or dependence	Primary	10	854	-0.785	0.001	-0.785	0.254	35	0.000	0.000	36
Alcohol use	Primary	2	155	-0.281	0.095	-0.281	0.250	35	0.000	0.000	36
Death	Primary	4	158	-0.258	0.142	-0.258	0.176	35	0.000	0.000	36
STD risky behavior	Primary	3	492	-0.560	0.001	-0.560	0.243	35	0.000	0.000	36

Citations Used in the Meta-Analysis

Bale, R.N., Van, S.W.W., Kuldau, J.M., Engelsing, T.M., Elashoff, R.M., & Zarcone, V.P.J. (J1980). Therapeutic communities vs methadone maintenance. A prospective controlled study of narcotic addiction treatment: design and one-year follow-up. *Archives of General Psychiatry, 37*(2), 179-193.

Dolan, K.A., Shearer, J., MacDonald, M., Mattick, R.P., Hall, W., & Wodak, A.D. (2003). A randomised controlled trial of methadone maintenance treatment versus wait list control in an Australian prison system. *Drug and Alcohol Dependence, 72*(1), 59-65.

Gronbladh, L. & Gunne, L. (1989). Methadone-assisted rehabilitation of Swedish heroin addicts. *Drug and Alcohol Dependence, 24*(1), 31-37.

Gruber, V.A., Delucchi, K.L., Kielstein, A., & Batki, S. L. (2008). A randomized trial of 6-month methadone maintenance with standard or minimal counseling versus 21-day methadone detoxification. *Drug and Alcohol Dependence, 94*(1), 199-206.

Kinlock, T., Gordon, M., Schwartz, R., O'Grady, K., Fitzgerald, T., & Wilson, M. (2007). A randomized clinical trial of methadone maintenance for prisoners: Results at 1-month post-release. *Drug and Alcohol Dependence, 91*(2-3), 220-227.

Kinlock, T., Gordon, M., Schwartz, R., & O'Grady, K. (2008). A Study of Methadone Maintenance for Male Prisoners: 3-Month Postrelease Outcomes. *Criminal Justice and Behavior, 35*(1), 34-47.

Kinlock T.W., Gordon M.S., Schwartz R.P., Fitzgerald, T.T., O'Grady, K.E. (2009). A randomized clinical trial of methadone maintenance for prisoners: Results at 12 months postrelease. *Journal of Substance Abuse Treatment, 37*(3), 277-285.

McKenzie, M., Zaller, N., Dickman, S., Green, T., Parihk, A., Friedman, P., & Rich, J. (2012). A Randomized Trial of Methadone Initiation Prior to Release from Incarceration. *Substance Abuse, 33*(1), 19-29.

Newman, R., & Whitehill, W. (1979). Double-blind comparison of methadone and placebo maintenance treatments of narcotic addicts in Hong Kong. *The Lancet, 314*(8141), 485-488.

Schwartz, R.P., Highfield, D.A., Jaffe, J.H., Brady, J.V., Butler, C.B., Rouse, C.O., Callaman, J.M., ... Battjes, R.J. (2006). A randomized controlled trial of interim methadone maintenance. *Archives of General Psychiatry, 63*(1), 102-109.

Schwartz, R. P., Jaffe, J. H., Highfield, D.A., Callaman, J.M., & O'Grady, K.E. (2007). A randomized controlled trial of interim methadone maintenance: 10-Month follow-up. *Drug and Alcohol Dependence, 86*(1), 30-36.

Strain, E.C., Stitzer, M.L., Liebson, I.A., & Bigelow, G.E. (1993). Dose-response effects of methadone in the treatment of opioid dependence. *Annals of Internal Medicine, 119*(1), 23-27.

Vanichseni, S., Wongsuwan, B., Choopanya, K., & Wongpanich, K. (1991). A controlled trial of methadone maintenance in a population of intravenous drug users in Bangkok: implications for prevention of HIV. *Substance Use & Misuse, 26*(12), 1313-1320.

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